

REMARKS

Claims 1-29 are pending in the application. Claims 1-29 stand rejected. Claims 1, 9, 13, and 21 are being amended. No new matter is being introduced by way of these amendments.

Claims 9 and 13 were rejected in Part 2 of the present Office Action under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 9 and 13 are being amended in the claim listing above to overcome the rejection. Accordingly, Applicants respectfully request the rejection be withdrawn.

In Part 6 of the present Office Action, claims 1-2, 4, 6-7, 15-17, and 19-20 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,656,882 A to Lazarus et al.

An electrical power generation system of Claim 1, as amended in the claim listing above, recites, “a transducer including an electro-active material . . . and non-electro-active material coupled to the electro-active material.” Support for the claim amendment can be found at least in Fig. 1B and the specification as originally filed on page 6, lines 4-9. The electrical power generation system of claim 1 also recites, “a buffer mechanically coupled to the transducer . . . facilitating the transducer to operate within a predetermined mechanical loading range.” When comparing amended claim 1 against the cited references, it is useful to understand the distinction between the “non-electro-active material” and the “buffer,” namely, the “non-electro-active material” is inside the transducer, and the “buffer” is external from the transducer.

Referring now to the cited reference, Lazarus discloses a typical actuator assembly in which electro-active material is bonded to an electroded sheet by a structural polymer to form a card. See abstract, lines 1-3. The bonding occurs inside the actuator assembly, and the structural polymer (i) provides a bending stiffness such that the thin electro-active material does not deform to its breaking point and (ii) provides a mechanical stiffness such that shear forces are efficiently coupled from the electro-active material to a workpiece. See abstract, lines 9-13. The structural polymer is inside the actuator assembly, and, thus, is the “non-electro-active material coupled to the electro-active material,” as recited in Applicants’ amended claim 1. Lazarus does not disclose in his abstract, “a buffer mechanically coupled to the transducer and adapted to be mechanically coupled to a structure,” as also recited in Applicants’ now amended claim 1.

Similarly, referring to Lazarus' Fig. 2B, the Lazarus device includes a thin film 110 that provides an electrical connection to a bare electro-active (e.g., piezo) material, as well as providing electrical environmental separation between structure/environment and the bare electro-active material. In terms of its relationship to Applicants' now amended claim 1, the thin film 110 of Lazarus is internal to the actuator assembly and, thus, is the "non-electro-active material coupled to the electro-active material," of Applicants' claim 1. Lazarus again fails to disclose a "buffer," as described above.

In Part 7, on page 3 of the present Office Action, claims 3, 5, 8-10, 14, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus in view of U.S. Patent No. 5, 305, 507 A to Dvorsky et al. ("Dvorsky"). Because these claims depend from claim 1, the remarks presented above apply. Therefore, because the rejection under 35 U.S.C. 103(a) is not being applied to claim 1, Applicants respectfully submit that the rejections of claims 3, 5, 8-10, 14, and 18 should be withdrawn for at least the same reasons as described above in reference to claim 1.

In Part 10, page 5 of the present Office Action, claims 11-13 and 21-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus in view of Dvorsky and further in view of U.S. Patent No. 4, 467, 236 to Kolm et al.

Claim 21 is being amended in the claim listing above to include limitations similar to claim 1. Accordingly, Applicants respectfully submit that, since the rejection under 35 U.S.C. 103(a) is not being presented in reference to claim 1, the rejections of claims 11-13 and 21-29 should be withdrawn for at least the same reasons as presented above in reference to claim 1.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (claims 1-29) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Mark B Solomon
Mark B. Solomon
Registration No. 44,348
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 12/5/05